

RUBRIC FOR PERFORMANCE TASK #1 — STUDYING FUNCTIONS

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	- Attempted solution demonstrates limited understanding of domain and range. - Few lines of symmetry recognized. - Some steps of finding inverse performed but may contain inaccuracies.	- Solution demonstrates some evidence of understanding of domain and range. - Some lines of symmetry recognized. - Most steps of finding inverse performed but may contain inaccuracies.	- Solution demonstrates sufficient evidence to show understanding of domain and range. - Most lines of symmetry recognized. - Finding inverse performed completely; most computations generally correct.	- Detailed solution demonstrates thorough understanding of domain and range. - All lines of symmetry recognized. - Finding inverse performed completely, accurately, and verified or supported.
	Communication			
	- Solution has few accurate graphs and diagrams. - Explanations and justifications are unclear.	- Solution has some accurate graphs and diagrams. - Explanations and justifications are understandable but unclear.	- Solution has several accurate graphs and diagrams. - Explanations and justifications are clear.	- Solution has accurate graphs and diagrams that address all aspects of the problem. - Explanations and justifications are clear and thorough.
	Application			
	- Few transformations are appropriate to the context of the question. - Transformations are inaccurate.	- Some transformations are appropriate to the question. - Transformations have minor errors.	- Most transformations are appropriate to the question. - Transformations are correct.	- All transformations are appropriate to the question. - Transformations are correct and verified or supported.

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RUBRIC FOR PERFORMANCE TASK #2 — THE COST OF MONEY

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	Only one equation was created and it contains inaccuracies.	Several equations were created but may contain inaccuracies.	Several equations were created; most computations are correct.	Several equations were created accurately and verified or supported.
	Thinking/Inquiry/Problem Solving			
	Reasoning is evident but lacks consistency.	Reasoning is evident and logical in parts of the problem.	Reasoning is logical and consistent within context.	Reasoning is logical, consistent, and relates to broader context.
	Communication			
	- Student uses few mathematical forms and graphs correctly. - Explanations and justifications are unclear.	- Student uses some mathematical forms and graphs correctly. - Explanations and justifications are understandable but unclear.	- Student uses mathematical forms and graphs correctly. - Explanations and justifications are clear.	- Student integrates a broad range of mathematical forms (graphs, tables, diagrams, etc.). - Explanations and justifications are clear and thorough.
	Application			
	Student applies inverse inaccurately.	Student applies inverse with some minor errors.	Student applies inverse correctly.	Student applies inverse correctly and verifies or supports inverse.

RUBRIC FOR PERFORMANCE TASK #3 — EXPONENTIAL EQUATIONS

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	Some exponential equations solved but solutions may contain inaccuracies.	Most exponential equations solved but solutions may contain inaccuracies.	Exponential equations solved completely; most computations generally correct.	Exponential equations solved completely, accurately, and verified or supported.
	Thinking/Inquiry/Problem Solving			
	- Graphical models address few aspects of the problem. - Reasoning is evident but lacks consistency.	- Graphical models address some aspects of the problem. - Reasoning is evident and logical in parts of the problem.	- Graphical models address most aspects of the problem. - Reasoning is logical and consistent within context.	- Appropriate graphical models integrate all aspects of the problem. - Reasoning is logical, consistent, and relates to broader context.
	Communication			
	- Few mathematical conventions are used. - Explanation or demonstration includes either mathematical form or narrative form, but not both.	- Some mathematical conventions are used correctly. - Explanation or demonstration includes both mathematical and narrative forms, but the forms are not integrated.	- Most mathematical conventions are used correctly. - Mathematical and narrative forms are present and integrated.	- Consistently uses mathematical conventions correctly. - Various mathematical and narrative forms are present, integrated, and well chosen.

RUBRIC FOR PERFORMANCE TASK #4 — GRAPHING COMPLEX NUMBERS

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	Some suggested steps performed but may contain inaccuracies.	Most suggested steps performed but may contain inaccuracies.	Suggested steps performed completely; most constructions generally correct.	Suggested steps performed completely, accurately, and verified or supported.
	Thinking/Inquiry/Problem Solving			
	- Conjectures created, but links to problem are weak. - Reasoning is evident but lacks consistency. - Conclusions are somewhat connected with work but are not supported.	- Conjectures created, but connection to problem is weak. - Reasoning is evident and logical in parts of the problem. - Conclusions are consistent with work but are not fully supported.	- Conjectures relate to problem. - Reasoning is logical and consistent within context. - Conclusions are supported by evidence and integrate aspects of the problem.	- Clear conjectures relate to problem. - Reasoning is logical, consistent, and relates to broader context. - Conclusions are supported, integrate all aspects of the problem, and are convincing.
	Communication			
	- Few mathematical conventions and vocabulary are used. - Explanations and justifications are unclear.	- Some mathematical conventions and vocabulary are used correctly. - Explanations and justifications are understandable but unclear.	- Most mathematical conventions and vocabulary are used correctly. - Explanations and justifications are clear.	- Consistently uses mathematical conventions and vocabulary correctly. - Explanations and justifications are clear and thorough.

RUBRIC FOR PERFORMANCE TASK #5 — GRAPHING EQUATIONS

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	Student demonstrates weak knowledge of base graphs and recognizes few transformations.	Student recognizes some base graphs and some transformations.	Student recognizes most base graphs and recognizes most transformations.	Student recognizes all base graphs and all transformations.
	Thinking/Inquiry/Problem Solving			
	- Reasoning is evident but lacks consistency. - Student matches some graphs and equations but does not explain why.	- Reasoning is evident and logical in parts of the problem. - Student matches most graphs and equations but does not explain why.	- Reasoning is logical and consistent within context. - Student matches graphs and equations, supports choices with evidence, and integrates aspects of the situation.	- Reasoning is logical, consistent, and relates to broader context. - Student matches graphs and equations, supports choices with evidence, integrates all aspects of the situation, and argues convincingly.
	Communication			
	- Student describes few features of the graph. - Explanations and justifications are unclear.	- Student accurately describes some features of the graph. - Explanations and justifications are understandable but unclear.	- Student accurately describes most features of the graph. - Explanations and justifications are clear.	- Student accurately describes all features of the graph. - Explanations and justifications are clear and thorough.

RUBRIC FOR PERFORMANCE TASK #6 — CHARTERING A FLIGHT

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	Student graphs relations and creates equations inaccurately.	Student graphs relations and creates equations with minor errors.	Student graphs accurate relations and creates accurate equations.	Student graphs relations and creates equations, taking all facets of the problem into account.
	Thinking/Inquiry/Problem Solving			
	Reasoning is evident but lacks consistency.	Reasoning is evident and logical in parts of the problem.	Reasoning is logical and consistent within context.	Reasoning is logical, consistent, and relates to broader context.
	Communication			
	- Few mathematical conventions are used. - Student gathers limited but accurate information from charts and graphs.	- Some mathematical conventions are used correctly. - Student gathers some information from charts and graphs but has difficulty interpreting it.	- Most mathematical conventions are used correctly. - Student gathers sufficient information from charts, graphs it, and interprets it correctly.	- Consistently uses mathematical conventions correctly. - Student gathers complex information from charts, graphs the information, and interprets it fully.
	Application			
	For algebraic solution, student makes inaccurate predictions and comparisons.	For algebraic solution, student makes predictions and comparisons with minor errors or omissions.	For algebraic solution, student accurately predicts and compares.	For algebraic solution, student accurately predicts, compares, and verifies prediction.

RUBRIC FOR PERFORMANCE TASK #7 — FRACTALS

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	- Some steps of substitutions and evaluations performed but they may have inaccuracies. - Attempted solution demonstrates limited understanding of complex numbers.	- Most steps of substitutions and evaluations performed but they may have inaccuracies. - Solution demonstrates some understanding of complex numbers.	- Substitutions and evaluations performed completely; most computations generally correct. - Solution demonstrates sufficient understanding of complex numbers.	- Substitutions and evaluations performed completely, accurately, and verified or supported. - Detailed solution demonstrates thorough understanding of complex numbers.
	Thinking/Inquiry/Problem Solving			
	Reasoning is evident but lacks consistency.	Reasoning is evident and logical in parts of the problem.	Reasoning is logical and consistent within context.	Reasoning is logical, consistent, and relates to broader context.
	Communication			
	- Student gathers limited but accurate information from mathematical language. - Little evidence of function notation and other mathematical conventions.	- Student gathers some information from mathematical language but has difficulty interpreting it. - Some appropriate use of function notation and other mathematical conventions.	- Student gathers sufficient information from mathematical language and interprets the information correctly. - Use of function notation and mathematical conventions.	- Student gathers complex information from mathematical language and interprets the information fully. - Extensive and appropriate use of function notation and mathematical conventions.

RUBRIC FOR PERFORMANCE TASK #8 — PRESENTING MATH

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Knowledge/Understanding			
	Student demonstrates weak knowledge of base graphs.	Student recognizes some base graphs.	Student recognizes most base graphs.	Student recognizes all base graphs.
	Thinking/Inquiry/Problem Solving			
	- Reasoning is evident but lacks consistency. - Some connections between graphs and equations but connections are not supported.	- Reasoning is evident and logical in parts of the problem. - Connections between graphs and equations are consistent but connections are not fully supported.	- Reasoning is logical and consistent within context. - Connections between graphs and equations are supported by evidence and integrate aspects of the situation.	- Reasoning is logical, consistent, and relates to broader context. - Connections between graphs and equations are supported, integrate all aspects of the situation, and are convincing.
	Communication			
	- Student describes few features of the graph. - Presentation shows few visuals and limited use of technology. - Explanations and justifications are unclear.	- Student accurately describes some features of the graph. - Presentation shows some visuals and some use of technology. - Explanations and justifications are understandable but unclear.	- Student accurately describes most features of the graph. - Presentation shows visuals and appropriate use of technology. - Explanations and justifications are clear.	- Student accurately describes all features of the graph. - Presentation shows extensive, well-chosen, and well-integrated visuals and use of technology. - Explanations and justifications are clear and thorough.
	Application			
	Student chooses and applies few appropriate transformations.	Student chooses and applies some appropriate transformations.	Student applies most appropriate transformations.	Student applies a wide variety of appropriate transformations.

RUBRIC FOR PERFORMANCE TASK #9 — DEMONSTRATING MATH

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Thinking/Inquiry/Problem Solving			
	- Reasoning is evident but lacks consistency. - Some connections between graphs and equations but connections are not supported.	- Reasoning is evident and logical in parts of the problem. - Connections between graphs and equations are consistent but connections are not fully supported.	- Reasoning is logical and consistent within context. - Connections between graphs and equations are supported by evidence and integrate aspects of the situation.	- Reasoning is logical, consistent, and relates to broader context. - Connections between graphs and equations are supported, integrate all aspects of the situation, and are convincing.
	Communication			
	- Presentation shows few visuals and limited use of technology. - Explanations and justifications are unclear.	- Presentation shows some visuals and some use of technology. - Explanations and justifications are understandable but unclear.	- Presentation shows visuals and appropriate use of technology. - Explanations and justifications are clear.	- Presentation shows extensive, well-chosen, and well-integrated visuals and use of technology. - Explanations and justifications are clear and thorough.
	Application			
	Algebraic and graphical models are only partially appropriate to the context of the questions. Selected strategies are used with some inaccuracies.	Algebraic and graphical models are generally appropriate to the questions. Selected strategies are used but may contain minor errors.	Algebraic and graphical models are appropriate and relate to the context of the questions. Selected strategies are used correctly.	Algebraic and graphical models are appropriate, efficient, and relate to the broadest context of the questions. Selected strategies are used correctly and are verified or supported.

RUBRIC FOR PERFORMANCE TASK #10 — HOW FAST?

Scores and Criteria				
Assessment Category	Passable level of achievement – below provincial standard LEVEL 1	Moderate level of achievement – below, but approaching provincial standard LEVEL 2	High level of achievement – at provincial standard LEVEL 3	Very high to outstanding level of achievement – above provincial standard LEVEL 4
	Thinking/Inquiry/Problem Solving			
	- Reasoning is evident but lacks consistency. - Some connections between graphs and equations but connections are not supported.	- Reasoning is evident and logical in parts of the problem. - Connections between graphs and equations are consistent but connections are not fully supported.	- Reasoning is logical and consistent within context. - Connections between graphs and equations are supported by evidence and integrate aspects of the situation.	- Reasoning is logical, consistent, and relates to broader context. - Connections between graphs and equations are supported, integrate all aspects of the situation, and are convincing.
	Communication			
	- Presentation shows few visuals and limited use of technology. - Explanations and justifications are unclear.	- Presentation shows some visuals and some use of technology. - Explanations and justifications are understandable but unclear.	- Presentation shows visuals and appropriate use of technology. - Explanations and justifications are clear.	- Presentation shows extensive, well-chosen, and well-integrated visuals and use of technology. - Explanations and justifications are clear and thorough.
	Application			
	- Algebraic and graphical models are only partially appropriate to the context of the questions. - Selected strategies are used with some inaccuracies.	- Algebraic and graphical models are generally appropriate to the questions. - Selected strategies are used but may contain minor errors.	- Algebraic and graphical models are appropriate and relate to the context of the questions. - Selected strategies are used correctly.	- Algebraic and graphical models are appropriate, efficient, and relate to the broadest context of the question. - Selected strategies are used correctly and are verified or supported.